

ATTORNEY DOCKET NO.: 8571:76 CIP

PATENT
Customer Number 22444IN THE DRAWINGS

Revised drawings are submitted to comply with 37 CFR § 1.84. The collected drawings may be found in Appendix A as Figures 1 through 12. No new matter was introduced.

IN THE CLAIMS

Please amend the claims as follows:

Sub. C1

31. (Amended) A system for vectoring a primary flow by varying an effective throat or sonic plane within a ducted primary flow, comprising:
- an opening for accepting the primary flow;
 - at least one primary injector located wherein said at least one injector is inclined to oppose the primary flow up-stream of said effective throat or sonic plane;
 - at least one supplemental injector wherein said at least one supplemental injector is located downstream of the at least one primary injector, wherein said at least one supplemental injector is inclined to oppose the primary flow, and wherein the at least one primary and supplemental injectors provide a flow field opposed to a subsonic portion of the primary flow in order to vector the primary flow; and
 - at least one controller operable to direct said at least one primary and supplemental injector to provide a flow operable to vary the effective throat or sonic plane.
32. (Amended) The system for vectoring a primary flow of Claim 31, further comprising:
- a physical throat, within a duct, wherein the physical throat comprises a region of lowest cross-sectional area, in the primary flow.
33. (Amended) The system for vectoring a primary flow of Claim 32 wherein a plurality of primary injectors is located proximate to said physical throat.
34. Cancelled.
35. (Amended) The system for vectoring a primary flow of Claim 31 wherein injectors inject fluid asymmetrically, to redirect the primary flow along an intended vectoring plane.

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36. (Amended) The system for vectoring a primary flow of Claim 35 wherein a plurality of primary and secondary injectors inject fluidic pulses.

37. (Amended) The system for vectoring a primary flow of Claim 33, wherein a plurality of secondary injectors are arranged to inject fluid to oppose the primary flow and in parallel to the intended vectoring plane.

38. (Amended) The system for vectoring a primary flow of Claim 37 wherein the plurality of primary injectors and the plurality of secondary injectors inject fluid symmetrically, resulting in a change in a discharge coefficient in the nozzle.

39. Cancelled.

40. (Amended) The system for vectoring a primary flow of Claim 31 wherein injected fluid comprises compressed gas.

41. (Amended) The system for vectoring a primary flow of Claim 31 wherein injected fluid comprises fuel.

42. (Amended) The system for vectoring a primary flow of Claim 31, further comprising:

at least one controller, operable to direct said at least one primary injector and/or said at least one supplemental injector.

43. Cancelled.

44. (Amended) A method for vectoring a primary flow of fluid in a 3-D nozzle, comprising the steps of:

injecting fluid from a plurality of primary injectors opposed to a primary flow of the fluid and approximately parallel to an intended vectoring plane, the plurality of injectors located proximate to a throat;

injecting fluid from a plurality of supplemental injectors opposed to the primary flow wherein said second plurality of supplemental injectors are located downstream of the throat, and wherein the fluid injected by said primary and/or supplemental injectors varies or skews an effective throat or sonic plane of said 3-D nozzle.

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45. Cancelled.

46. (Amended) The method of Claim 44, further comprising:

expelling from a second plurality of injectors the injection fluid in a direction inclined to oppose the primary flow of the fluid and approximately parallel to an intended vectoring plane, wherein said supplemental plurality of injectors are located proximate to the throat.

47. (Amended) The method of Claim 44 wherein fluid is injected by said primary and/or supplemental injectors in fluidic pulses.

48. (Amended) The method of Claim 44 wherein the injected fluid comprises a compressed gas.

49. (Amended) The method of Claim 44 wherein the injected fluid comprises fuel.

50. Cancelled.

51. (Amended) A system for vectoring a primary flow comprising:

a nozzle having an inner surface and a throat, wherein the throat comprises a region within the nozzle of lowest cross-sectional area, the throat being situated in a path of the primary flow of fluid;

a plurality of primary injectors arranged along the inner surface of the nozzle, the plurality of injectors arranged to oppose the primary flow of fluid in a first intended vectoring plane, and wherein said primary injectors skew an effective throat or sonic plane within said nozzle.

52. (Amended) The system for vectoring a primary flow of Claim 51 wherein the plurality of injectors is located proximate to the throat.

53. (Amended) The system for vectoring a primary flow of Claim 52, further comprising:

a plurality of supplemental injectors located downstream of the throat and arranged along the inner surface of the nozzle, to oppose the primary flow in a second intended vectoring plane.

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54. (Amended) The system for vectoring a primary flow of Claim 53 wherein the plurality of primary and supplemental injectors inject fluid asymmetrically, resulting in a change in a thrust vector associated with the primary flow of the fluid, the change in the thrust vector lying within the first and/or second intended vectoring plane.

55. (Amended) The system for vectoring a primary flow of Claim 54 wherein the plurality of primary and supplemental injectors inject fluidic pulses.

56. (Amended) The system for vectoring a primary flow of Claim 53, wherein said supplemental injectors are:

located proximate to the throat.

57. (Amended) The system for vectoring a primary flow of Claim 56 wherein the plurality of primary and/or supplemental injectors inject fluid symmetrically, resulting in a change in a discharge coefficient for the nozzle.

58. Cancelled.

59. (Amended) The system for vectoring a primary flow of Claim 51 wherein the injected fluid comprises compressed gas.

60. (Amended) The system for vectoring a primary flow of Claim 51 wherein the injected fluid comprises fuel.

61. (Amended) The system for vectoring a primary flow of Claim 53, further comprising:

at least one controller, operable to direct said primary and/or supplemental injectors.

62. (Amended) The system for vectoring a primary flow of Claim 61, wherein said at least one controller, directs said primary and/or supplemental injectors to inject fluidic pulses.

63. (Amended) A method for vectoring a primary flow within a nozzle comprising the steps of:

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injecting from a plurality of primary injectors a fluid opposed to the primary flow wherein said plurality of primary injectors are located proximate to a throat of the nozzle;

injecting from a plurality of supplemental injectors fluid to oppose the primary flow, the plurality of supplemental injectors located downstream of the throat, wherein said injected fluid skews or varies an effective throat or sonic plane within the nozzle.

64. Cancelled.

65. (Amended) The method of Claim 63, wherein said supplemental injectors are located proximate to the throat.

66. (Amended) The method of Claim 63 wherein fluid is injected as fluidic pulses.

67. (Amended) The method of Claim 63 wherein the injected fluid comprises compressed gas.

68. (Amended) The method of Claim 63 wherein the injected fluid comprises fuel.

69. Cancelled.

70. Cancelled.

71. Cancelled.

72. Cancelled.

73. Cancelled.

74. Cancelled.